

## **REMARKS**

By this amendment, Applicants have amended the claims consistent with page 9 of the Office Action and as described in paragraphs 5, 26, 28 and Table 3 of the published application US 2009/0062117 where catalysts C1, C3, and C5 have a separate first support material and a separate second support material. Further, the first support material contains the noble metal, while the second support material containing the nitrogen oxide storage component does not contain the noble metal. As previously stated in the prior response and in the Declarations from Dr. Wittrock and Dr. Gobel, both co-inventors of the above-identified application, the claimed catalyst had unexpected efficiency and thermal stability (see declarations previously submitted of Dr. Wittrock and Dr. Gobel at paragraphs 9 and 10). New claim 16 has been added that specifically recites catalyst C1 in Table 3 of the published application US 2009/0062117. These amendments and new claim do not add new matter. Applicants respectfully request entry of these amendments and allowance of the pending claims.

### **I. Terminal Disclaimer**

Applicants note that their petition was denied and that the Terminal Disclaimer filed on August 17, 2009 in view of U.S. Patent No. 6,858,193 is in effect.

### **II. Provisional Double Patenting Rejection**

Claims 1-5, 8-10, 13 and 15 are rejected on the grounds of provisional nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 5-24 of co-pending Application No. 12/444,304 (Grisstede). Applicants respectfully disagree with this rejection and respectfully submit that the Examiner reconsider it in light of the amended claims.

Grisstede is directed to a process that allows for the desulfurization temperature of conventional nitrogen oxide storage catalysts containing platinum and at least one nitrogen oxide storage material to be lowered. Grisstede does not make obvious a nitrogen oxide storage catalyst having a separate first support material comprising Mg/Al oxide and a separate second support material comprising Mg/Al oxide and that the first

support material contains the noble metal, while the second support material containing the nitrogen oxide storage component does not contain the noble metal, where the claimed catalyst exhibits unexpected efficiency and thermal stability. Accordingly, Applicants respectfully request withdrawal of this rejection.

### **III. Rejections Under 35 U.S.C. §103(a)**

Claims 1-5, 8-10, 13 and 15 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over US 2003/0125202 (Ruwisch '202) alone or in combination with US 6,350,421 (Strehlau). Applicants respectfully traverse these rejections.

The Applicants respectfully submit that the cited prior art does not render the present claims obvious, as one of ordinary skill in the art would not combine the references in the manner that the Examiner applies them and the combination fails to make obvious every element as required.

Applicants have amended the claims to include that the oxidation-active component is on a first support material of homogeneous Mg/Al oxide and the NO<sub>x</sub> storage component is on a second support material of homogeneous Mg/Al oxide that is a separate support material from the first support material and further that the first support material contains the noble metal, while the second support material containing the nitrogen oxide storage component does not contain the noble metal. This amendment is consistent with page 9 of the Office Action. Applicants respectfully submit, and as discussed in the previously filed declaration of Dr. Wittrock and Dr. Gobel, that the claimed catalyst had unexpected efficiency and thermal stability which is not made obvious by Ruwisch '202 alone or in combination with Strehlau.

The Examiner alleges that at paragraphs 16, 42-44, 46, and Tables 2-3, Ruwisch '202 teaches a NO<sub>x</sub> storage catalyst containing a Mg-Al mixed oxide support material doped with rare earth oxides and comprises a NO<sub>x</sub> storage material supported thereon, wherein the mixed oxide contains MgO within the claimed range (Office Action, page 5). Applicants respectfully disagree. While Ruwisch '202 lists homogenous Mg-Al mixed oxide material for the oxidation component containing Pt, Ruwisch '202 does not disclose or make obvious using Mg-Al mixed oxide as a separate second support material

for the nitrogen oxide storage component and that the first support material contains the noble metal, while the second support material does not contain the noble metal as currently claimed.

Further the support material used in Ruwisch '202 has Mg-Al mixed oxide as two components of the catalyst and is listed as a comparative catalyst CC2 in Table 3 of Ruwisch '202 reproduced below:

TABLE 3

Coating component	Composition of the catalysts			
	Concen- tration [g/l]	Plati- num [g/l]	Palladium [g/l]	Rhodium [g/l]
<u>Comparative catalyst CC1</u>				
10La/Al <sub>2</sub> O <sub>3</sub>	123.9	3.18	1.06	
3La/Al <sub>2</sub> O <sub>3</sub>	10			0.35
BaO/Ce/Zr oxide	160			
<u>Comparative catalyst CC2</u>				
Mg/Al mixed oxide II (20/80)	123.9	3.18		
Mg/Al mixed oxide II (20/80)	160			

This two component support material comprising Mg-Al mixed oxide is described in Ruwisch '202 as an inferior catalyst.

[0081] FIG. 3 shows the comparison of the nitrogen oxide storage efficiencies of the two Comparative Catalysts CC1 and CC2, both in fresh and aged states. **Even in a fresh state, Comparative Catalyst CC2 is clearly inferior to Catalyst CC1. After ageing, Comparative Catalyst CC2 has become completely unsuitable for the storage of nitrogen oxides.**

(Ruwisch '202 at paragraph [0081] and emphasis added). Therefore, one of ordinary skill in the art on reading Ruwisch '202 would not use the combination of features of the Mg-Al mixed oxide material for the oxidation component containing Pt and use Mg-Al mixed oxide as a separate second support material for the nitrogen oxide storage component and, further, that the first support material contains the noble metal, while the second support material does not contain the noble metal as currently claimed. Thus, the Examiner's position that one would "substitute" Ce/Zr oxide for Mg-Al mixed oxide mentioned on page 9 of the Office Action is untenable.

Further, Ruwisch '202 does not make obvious the unexpected thermal durability that the inventors have discovered when they used the oxidation-active component (e.g., Pt) on a first support material of homogeneous Mg/Al oxide and used the NO<sub>x</sub> storage component (e.g., BaO) on a separate second support material also containing homogeneous Mg/Al oxide but not the noble metal.

In support of this position, Applicants previously submitted the declarations of Dr. Wittrock and Dr. Gobel describing the catalysts in Table 3 of the current application and the unexpected thermal durability results in Figure 3 of the claimed catalyst C1 (containing first and second support material containing homogeneous Mg/Al oxide, where the first support material contains the noble metal and the second support material does not contain the noble metal) when it was compared to a comparative catalyst CC1 that had a first support material containing homogeneous Mg/Al oxide, but did not have the nitrogen oxide storage material containing BaO supported on a second support material of homogeneous Mg/Al oxide (see previously submitted declarations of Dr. Wittrock and Dr. Gobel at paragraphs 9 and 10).

The inventors also compared the claimed catalysts C3 and C5 (first and second support material containing homogeneous Mg/Al oxide, where the first support material contains the noble metal and the second support material does not contain the noble metal) to a comparative catalyst CC4 that had a first support material containing homogeneous Mg/Al oxide. In CC4 the nitrogen oxide storage component containing BaO was supported on Ce-Zr oxide as the second support material. The results were shown graphically in Figure 5. The claimed C3 and C5 catalysts unexpectedly had improved thermal durability and NO<sub>x</sub> storage efficiency compared to the catalyst CC4 that does not have a second support material containing homogeneous Mg/Al oxide (see previously submitted declarations of Dr. Wittrock and Dr. Gobel at paragraphs 11 and 12).

Like Ruwisch '202, Strehlau does not make the current claims obvious. Strehlau does not describe the unexpected thermal durability that the inventors discovered when they used the oxidation-active component on a first support material of homogeneous Mg/Al oxide and used the NO<sub>x</sub> storage component on a second support material also

containing homogeneous Mg/Al oxide, but no noble metal. Therefore, Strehlau does not make the claims obvious. (See previously submitted declarations of Dr. Witrock and Dr. Gobel at paragraph 16)

Applicants respectfully submit that one would not combine Ruwisch '202 and Strehlau together the way the Examiner does. Even if one were to combine the references together, Ruwisch and Strehlau do not make obvious the unexpected thermal durability that the inventors discovered when they used the oxidation-active component on a first support material of homogeneous Mg/Al oxide and used the NO<sub>x</sub> storage component on a separate second support material also containing homogeneous Mg/Al oxide, but no noble metal. Accordingly, Ruwisch '202 and Strehlau, alone or in combination do not make the currently pending claims obvious and Applicants respectfully request withdrawal of these rejections.

New claim 16 has been added that specifically recites catalyst C1 in Table 3 of the published application US 2009/0062117. Applicants also submit that Ruwisch '202 and Strehlau, alone or in combination do not make this new claim obvious.

#### **IV. Conclusion**

Reconsideration and allowance are respectfully requested.

No fee is believed to be due with respect to the filing of this Response. If any further fees are deemed due, or an overpayment has been made, please charge, or credit, Deposit Account No. 11-0171 for such sum. If the Examiner has any questions regarding the present application, the Examiner is cordially invited to contact Applicant's attorney at the telephone number provided below.

Respectfully submitted,

/William D. Schmidt/  
William D. Schmidt  
Registration No.: 39,492  
Attorney for Applicant

Kalow & Springut LLP  
Telephone No.: (212) 813-1600